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1 UNITED STATES PATENT AND TRADEMARK OFFICE

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4 BEFORE THE BOARD OF PATENT APPEALS
5 AND INTERFERENCES

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8 *Ex parte J. SCOTT CARR and GEOFFREY B. RHOADS*

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11 Appeal 2007-4208
12 Application 09/689,289
13 Technology Center 3600

14
15 Decided: April 7, 2008

16
17 Before ALLEN R. MACDONALD, ANTON W. FETTING, and
18 JOSEPH A. FISCHETTI, *Administrative Patent Judges.*

19
20 FETTING, *Administrative Patent Judge.*

21
22 DECISION ON APPEAL

23 STATEMENT OF CASE

24 J. Scott Carr and Geoffrey B. Rhoads (Appellants) seek review under
25 35 U.S.C. § 134 of a final rejection of claims 1-21, the only claims pending in the
26 application on appeal.

27 We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b) (2002).

1 We AFFIRM.

2 The Appellants invented a way to use digital watermarking to increase the
3 security of computer printing of envelopes and postage. Traceability of digital
4 postage is enhanced by serialization, i.e., embedding a serial number code or other
5 indicia that uniquely and covertly links the printed postage to some device or
6 software in the user's possession, or that identifies the user. Security of digital
7 postage against reproduction is enhanced through use of "fragile" digital
8 watermarks, designed not to fully withstand the scanning or printing operations
9 associated with photocopying or PC-based scanning and printing. (Specification
10 1:14 – 2:8).

12 An understanding of the invention can be derived from a reading of exemplary
13 claim 1, which is reproduced below [some paragraphing added].

14 1. An original envelope
15 having encoded thereon a fragile digital watermark
16 representing plural bits of digital data,
17 said watermark permitting a photocopy thereof to be
18 distinguished from the original.

19 Claims 2-13 depend from claim 1 and are similarly drawn to envelopes with
20 watermarks. Claims 14-16 and 21 are drawn to blank substrates with watermarks.
21 Claim 17 refers to claim 14 but is drawn to a printed document with the substrate
22 of claim 14. Claims 18-20 depend from claim 17.

23 This appeal arises from the Examiner's final Rejection, mailed February 9,
24 2005. The Appellants filed an Appeal Brief in support of the appeal on April 27,
25 2006. An Examiner's Answer to the Appeal Brief was mailed on July 17, 2006. A
26 Reply Brief was filed on September 12, 2006.

PRIOR ART

2 The Examiner relies upon the following prior art:

Leon	US 6,701,304 B2	Mar. 2, 2004
Bhaskaran	US 6,064,764	May 16, 2000
Yeung, et al. (Yeung), "Digital Watermarks: Shedding Light On The Invisible," <i>IEEE Micro</i> , Vol. 18, No. 6, ISSN 0272-1732, pp. 32-41, (November/December 1998)		

REJECTIONS

7 Claims 1-21 stand rejected under 35 U.S.C. § 101 as directed to non-statutory
8 subject matter.

9 Claims 1-21 stand rejected under 35 U.S.C. § 103(a) as unpatentable over
10 Leon, Bhaskaran, and Yeung.

ISSUES

The issues pertinent to this appeal are

- Whether the Appellants have sustained their burden of showing that the Examiner erred in rejecting claims 1-21 rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter.
- Whether the Appellants have sustained their burden of showing that the Examiner erred in rejecting claims 1-21 under 35 U.S.C. § 103(a) as unpatentable over Leon, Bhaskaran, and Yeung.

19 The pertinent issues turn on whether the claims are directed to statutory subject
20 matter and whether the combined art describes or suggests digital watermarks.

1 FACTS PERTINENT TO THE ISSUES

2 The following enumerated Findings of Fact (FF) are believed to be supported
3 by a preponderance of the evidence.

4 *Facts Related to Claim Construction and Scope*

5 01. Digital watermarking technology is a form of steganography, and
6 encompasses techniques by which plural bits of digital data are hidden in
7 some other object without leaving human-apparent evidence of alteration
8 or data representation (Specification 2:4-7).

9 02. The disclosure contains no lexicographic definition of
10 “steganography.”

11 03. The ordinary and customary meaning of “steganography” is hiding a
12 secret message within a larger one in such a way that others can not
13 discern the presence or contents of the hidden message.¹

14 04. A fragile digital watermark is one designed not to fully withstand the
15 scanning or printing operations associated with photocopying or PC-
16 based scanning and printing (Specification 4:9-11).

17 05. The inks used in digital watermarking may be invisible to the human
18 eye (Specification 4:12-13).

19 *Leon*

20 06. Leon is directed to techniques for producing postage labels that
21 include enhanced security features. Its postage labels use generated

1 indicia that can be printed on preprinted labels or directly onto mail
2 pieces, be formatted using a modular design, include various data fields,
3 be printed with different types of ink that may include taggants, be
4 encoded or signed using encryption keys, and include micro printing and
5 identifiers. The contents of the indicia can include human-readable and
6 machine-readable data elements. Machine-readable information
7 includes encoded texts, specially formatted texts, unintelligible texts, and
8 others that are not readily interpreted by the operator. The postage labels
9 can also include identifier information that include, for example,
10 fluorescent strips, marks such as watermarks, micro printing, imprints
11 using special ink and/or taggants, and other features that can be used for
12 authenticating the indicia (Leon 2:21-45).

13 07. An indicium can be printed on a postage label preprinted with any
14 combination of the following features: identifiers, fluorescent markings,
15 micro printing, and others. Generally, these features are designed to be
16 difficult to generate using standard printers (e.g., laser, dot matrix, ink
17 jet, and others) and also difficult to reproduce using conventional
18 techniques (e.g., xerographic reproduction). These features can be
19 generated by the printer designated with the task of printing the indicium
20 (Leon 8:24-39).

21 08. For indicia defined by a template, one or more indicium elements can
22 be interchanged. If a particular area of the indicia is defined as including

¹ The Free On-line Dictionary of Computing. Retrieved March 19, 2008, from Dictionary.com website: <http://dictionary.reference.com/browse/steganography>.

1 a barcode, that area may be designed to include a one-dimensional
2 barcode, a two-dimensional barcode, cryptographic text, or some other
3 elements (Leon 8:51-56).

4 09. The indicium can include information such as the postage amount,
5 graphics, time and date of the indicium creation, creation location, and
6 other pertinent information (Leon 8:62-65).

7 10. Elements in the indicia can be printed using various types of ink
8 including visible and invisible inks, fluorescent and non-fluorescent
9 inks, or any combination thereof. The ink used for some or all elements
10 can be visible to the human eye. The ink can also be invisible to the
11 human eye under white light (or daylight) and become apparent only
12 under light of specified wavelength(s) such as UV light. For example,
13 ink can be used that renders the printed materials invisible under normal
14 light, but would fluoresce blue under certain non-visible forms of light
15 for instance, UV light. Detection devices can be used to detect the
16 existence and contents of the printed materials, i.e., to authenticate the
17 indicia (Leon 9:14-25).

18 11. As another example, the fluorescent and non-fluorescent inks can be
19 non-pigmented, making them nearly invisible under normal light. Under
20 UV light, the materials printed with these inks can glow and stand out,
21 again radically changing the appearance of the label. Under normal
22 lighting conditions, the imprints can be viewed in similar ways as
23 watermarks, but are typically not conspicuous (Leon 9:14-25).

- 1 12. Taggants, which are microscopic identifiers, can be added to the ink
- 2 to provide enhanced security. Generally, taggants can be added to any
- 3 and all parts of the indicium (Leon 9:41-52).
- 4 13. Taggant beads may be manufactured with multi-colored layers that
- 5 are visible, for example, under a microscope. The color layers can be
- 6 arranged in patterns to encode information such as a manufacturer's
- 7 name, a batch number, or other information. For example, each
- 8 manufacturer can be assigned a unique color pattern that identifies that
- 9 manufacturer (Leon 9:61-67).
- 10 14. The postage label can be imprinted with one or more micro printing
- 11 portions. Each micro printing portion includes, for example, texts
- 12 printed in small size fonts or miniature graphics that are difficult to
- 13 detect and reproduce (i.e., using conventional printers). The micro
- 14 printing portions are, in many instances, practically invisible to the
- 15 human eye, and thus usually escape notice. These portions are typically
- 16 legible with the use of a magnifying glass or when viewed under a
- 17 microscope. Detection is especially difficult if the micro printing portion
- 18 is hidden with a visible pattern, printed along a ruled line, or manifested
- 19 on the label using other tricks. Such micro printing would, for example,
- 20 bleed into a solid line if xerographically copied (Leon 10:20-32).
- 21 15. The micro printing portions can be preprinted on the postage label by
- 22 a manufacturer using a suitable printing process, such as the micro
- 23 printing process used in the banking industry. The micro printing
- 24 portions can include information such as, for example, the

1 manufacturer's name, the batch number, or other information.

2 Alternatively or additionally, the printer that imprints the indicia can also
3 print micro printing portions, if the capability exists on the printer (Leon
4 10:33-41).

5 16. One or more identifiers can also be preprinted anywhere on the
6 postage label to provide enhanced security for the generated indicia.
7 Each identifier can include one or more elements for the purpose of
8 verifying the authenticity of the postage label created. The identifier
9 may have a strip of fluorescent ink, such as a visible pink/red strip of
10 fluorescent ink used by conventional postal equipment to automatically
11 validate mail. Other types of identifiers can differ in shape, placement,
12 color, or other characteristics from the conventional. For example,
13 rather than a strip, a proprietary logo can be designed. The identifier can
14 be recognized by character recognition or mark detection mechanisms
15 that exist in some scanning equipment used by the U.S. Postal Service
16 (Leon 10:42-59).

17 17. By printing the identifier (e.g., logo) using a special invisible ink,
18 security can be improved because the shape of the identifier, and even its
19 use, would not be readily apparent to those who may attempt to
20 counterfeit indicia. In addition, the invisible identifier can be combined
21 with the conventional pink/red strip to provide a combination of
22 compatibility with current recognition and validation techniques and
23 enhanced security provided by the use of these identifiers (Leon 111:1-
24 9).

1 *Bhaskaran*

2 18. Bhaskaran is directed to a technique for embedding a fragile
3 watermark in a digital image and a technique for detecting tampering of
4 a digital image so watermarked (Bhaskaran 2:51-54).

5 19. There are different types of watermarks which serve different
6 purposes. Tamper-resistant watermarks, for example, are designed to
7 identify ownership or the intended recipient of a digital image. To
8 function effectively as an identifier (i.e., to trace unauthorized
9 distribution of an image), a tamper-resistant watermark must be
10 embedded in the image so that it is impossible, or at least difficult, to
11 remove the watermark without visibly damaging the image. Such a
12 watermark must also be resistant to image processing techniques, such as
13 cropping, scaling, image enhancement, compression/decompression, etc.
14 In addition, a tamper-resistant watermark should be readily detectable
15 and recoverable by the proper authorities to permit the tracing and
16 identification of the image, even if someone has tampered with the
17 image (Bhaskaran 1:27-41).

18 20. Another type of watermarks, sometimes referred to as fragile
19 watermarks, are designed to detect tampering of an image. A fragile
20 watermark is embedded in a digital image so that, if someone tampers
21 with the image, that tampering will modify (or destroy) the watermark.
22 Fragile watermarks may be used, for example, in connection with
23 images generated by digital cameras to provide a basis for determining

1 whether or not an image has been tampered with after its creation
2 (Bhaskaran 1:42-50).

3 21. Digital images may be viewed by a printer that can produce color
4 prints that vary in quality depending on the printer (Bhaskaran 9:5-8).
5 22. Visible watermarking process and invisible watermarking process can
6 be combined depending upon the application (Bhaskaran 9:16-18).

7 *Yeung*

8 23. Yeung is directed to describing digital watermarking applications and
9 limitations. Yeung also describes the implications of watermarking for
10 digital imaging and media devices (Yeung 33:Left col., Top ¶).
11 24. In robust watermarking, the embedded watermark persists even after
12 attempted removal (Yeung 33:Right col., Second full ¶). Robust
13 watermarking is used for evidence of ownership, fingerprinting, tracing,
14 copy control, and labeling (Yeung 33:Right col., Third full ¶ - 34:Right
15 col.)

16 *Facts Related To The Level Of Skill In The Art*

17 25. Neither the Examiner nor the Appellants have addressed the level of
18 ordinary skill in the pertinent arts of watermarking. We will therefore
19 consider the cited prior art as representative of the level of ordinary skill
20 in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir.
21 2001) (“[T]he absence of specific findings on the level of skill in the art
22 does not give rise to reversible error ‘where the prior art itself reflects an
23 appropriate level and a need for testimony is not shown’”) (quoting

Litton Indus. Prods., Inc. v. Solid State Sys. Corp., 755 F.2d 158, 163 (Fed. Cir. 1985).

Facts Related To Secondary Considerations

26. There is no evidence on record of secondary considerations of non-obviousness for our consideration.

PRINCIPLES OF LAW

Claim Construction

8 During examination of a patent application, pending claims are given
9 their broadest reasonable construction consistent with the specification. *In*
10 *re Prater*, 415 F.2d 1393, 1404-05 (CCPA 1969); *In re Am. Acad. of Sci.*
11 *Tech Ctr.*, 367 F.3d 1359, 1369, (Fed. Cir. 2004).

12 Limitations appearing in the specification but not recited in the claim are not
13 read into the claim. *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 (Fed.
14 Cir. 2003) (claims must be interpreted “in view of the specification” without
15 importing limitations from the specification into the claims unnecessarily)

16 Although a patent applicant is entitled to be his or her own lexicographer of
17 patent claim terms, in *ex parte* prosecution it must be within limits. *In re Corr*,
18 347 F.2d 578, 580 (CCPA 1965). The applicant must do so by placing such
19 definitions in the Specification with sufficient clarity to provide a person of
20 ordinary skill in the art with clear and precise notice of the meaning that is to be
21 construed. *See also In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (although
22 an inventor is free to define the specific terms used to describe the invention, this
23 must be done with reasonable clarity, deliberateness, and precision; where an

1 inventor chooses to give terms uncommon meanings, the inventor must set out any
2 uncommon definition in some manner within the patent disclosure so as to give
3 one of ordinary skill in the art notice of the change).

4 *Nonstatutory Subject Matter*

5 35 U.S.C. § 101 provides:

6 Whoever invents or discovers any new and useful
7 process, machine, manufacture, or composition of matter,
8 or any new and useful improvement thereof, may obtain
9 a patent therefor, subject to the conditions and
10 requirements of this title.

11 This has been interpreted as follows:

12 In choosing such expansive terms as ‘manufacture’ and
13 ‘composition of matter,’ modified by the comprehensive
14 ‘any,’ Congress plainly contemplated that the patent laws
15 would be given wide scope.

16 *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980).

17 That wide scope nevertheless excludes laws of nature, natural phenomena, and
18 abstract ideas. “Such discoveries are ‘manifestations of . . . nature, free to all men
19 and reserved exclusively to none.’” *Id.* at 309, (quoting *Funk Bros. Seed Co. v.*
20 *Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948)). “Phenomena of nature, though just
21 discovered, mental processes, and abstract intellectual concepts are not patentable,
22 as they are the basic tools of scientific and technological work.” *Gottschalk v.*
23 *Benson*, 409 U.S. 63, 67 (1972).

24 Thus, the claimed invention as a whole must accomplish a practical
25 application. That is, it must produce a “useful, concrete and tangible result.” *State*
26 *Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1373

1 (Fed. Cir. 1998). The purpose of this requirement is to limit patent protection to
2 inventions that possess a certain level of “real world” value, as opposed to subject
3 matter that represents nothing more than an idea or concept, or is simply a starting
4 point for future investigation or research. *See e.g., Brenner v. Manson*, 383 U.S.
5 519, 528-36 (1966); *In re Ziegler* 992, F.2d 1197, 1200-03 (Fed. Cir. 1993)).

6 *Obviousness*

7 A claimed invention is unpatentable if the differences between it and the
8 prior art are “such that the subject matter as a whole would have been obvious at
9 the time the invention was made to a person having ordinary skill in the art.” 35
10 U.S.C. § 103(a) (2000); *KSR Int’l v. Teleflex Inc.*, 127 S.Ct. 1727 (2007); *Graham*
11 *v. John Deere Co.*, 383 U.S. 1, 13-14 (1966).

12 In *Graham*, the Court held that that the obviousness analysis is bottomed on
13 several basic factual inquiries: “[1] the scope and content of the prior art are to be
14 determined; [(2)] differences between the prior art and the claims at issue are to be
15 ascertained; and [(3)] the level of ordinary skill in the pertinent art resolved.” 383
16 U.S. at 17. *See also KSR Int’l v. Teleflex Inc.*, 127 S.Ct. at 1734. “The
17 combination of familiar elements according to known methods is likely to be
18 obvious when it does no more than yield predictable results.” *KSR*, at 1739.

19 “When a work is available in one field of endeavor, design incentives and
20 other market forces can prompt variations of it, either in the same field or a
21 different one. If a person of ordinary skill can implement a predictable variation, §
22 103 likely bars its patentability.” *Id.* at 1740.

23 “For the same reason, if a technique has been used to improve one device,
24 and a person of ordinary skill in the art would recognize that it would improve

1 similar devices in the same way, using the technique is obvious unless its actual
2 application is beyond his or her skill.” *Id.*

3 “Under the correct analysis, any need or problem known in the field of
4 endeavor at the time of invention and addressed by the patent can provide a reason
5 for combining the elements in the manner claimed.” *Id.* at 1742.

6 *Obviousness and Nonfunctional Descriptive Material*

7 Nonfunctional descriptive material cannot render nonobvious an invention that
8 would have otherwise been obvious. *In re Ngai*, 367 F.3d 1336, 1339 (Fed. Cir.
9 2004). Cf. *In re Gulack*, 703 F.2d 1381, 1385 (Fed. Cir. 1983) (when descriptive
10 material is not functionally related to the substrate, the descriptive material will not
11 distinguish the invention from the prior art in terms of patentability).

12 ANALYSIS

13 *Claims 1-21 rejected under 35 U.S.C. § 101 as directed to non-statutory subject
14 matter.*

15 The Examiner found that the claims were not tied to a technological art and
16 were therefore non-statutory (Answer 3-4). The Appellants contend that the claims
17 define novelty in terms of physical structure and are therefore statutory.

18 We agree. The claims are drawn to envelopes or other substrates having
19 indicia imprinted upon them in functional relationship with the underlying
20 substrate, and are therefore articles of manufacture, one of the four enumerated
21 categories of patentable subject matter. As the Board of Patent Appeals and
22 Interferences held in the precedential opinion in *Ex parte Lundgren*, 76 USPQ2d
23 1385 (BdPatApp&Int 2005), there is currently no judicially recognized separate

1 “technological arts” test to determine patent eligible subject matter under §101.
2 Therefore, we find the Examiner’s rejection was in error.

3 The Appellants have sustained their burden of showing that the Examiner erred
4 in rejecting claims 1-21 under 35 U.S.C. § 101 as directed to non-statutory subject
5 matter.

6 *Claims 1-21 rejected under 35 U.S.C. § 103(a) as unpatentable over Leon,
7 Bhaskaran, and Yeung.*

8 *Claims 1 and 14*

9 The Examiner found that Leon described using digital watermarks on
10 envelopes that permitted distinguishing a photocopy, but did not describe fragile
11 watermarks. To overcome this deficiency, the Examiner found that Bhaskaran
12 described fragile digital watermarks used for detecting tampering. The Examiner
13 concluded that it would have been obvious to a person of ordinary skill in the art to
14 have applied Bhaskaran’s fragile digital watermarks to Leon for detecting
15 tampering (Answer 4-5). The Examiner did not make any findings regarding
16 Yeung in the analysis of these two claims.

17 The Appellants contend that Leon describes traditional rather than digital
18 watermarks and that there is no reason to apply Bhaskaran to Leon.

19 Since Leon does not explicitly indicate whether or not its watermarks are
20 digital, the Appellants rely on inferential arguments. They argue that Leon does
21 not include watermarks among the groups of human readable or machine readable
22 information, but among identifier information instead. The Appellants then argue
23 that using watermarks as identifiers is how conventional watermarks, as contrasted
24 with digital watermarks, are used. The Appellants argue that because digital

1 watermarking is a form of steganography, which uses hidden images, such use of
2 watermarks as identifiers implies Leon's watermarks are not hidden and therefore
3 not digital (Appeal Br. 8-11).

4 The Appellants argue that there is no reason to apply Bhaskaran to Leon
5 because the Examiner's reason is premised on an erroneous finding of digital
6 watermakrs in Leon and that Leon already provides the functionality of tamper
7 protection that the Examiner cites Bhaskaran for (Appeal Br. 11-12).

8 We disagree.

9 First we find that whether Leon describes an original envelope having encoded
10 thereon a watermark representing plural bits of digital data and whether Leon
11 describes indicia permitting a photocopy thereof to be distinguished from the
12 original are not in dispute. We further find that Leon does describe these
13 limitations in terms of a mail piece with watermarks generated from digital data,
14 which therefore represent plural bits of digital data, and bleeding of the image in a
15 xerographic copy (FF 06 & 15). We also find that whether Bhaskaran describes
16 the use of fragile watermarks for distinguishing a copy from an original is not in
17 dispute and that Bhaskaran does in fact describe this (FF 18).

18 Thus, the only issues before us are whether the use of a fragile digital
19 watermark in Leon's postage label was described, suggested, or was otherwise
20 predictable to one of ordinary skill and whether it was reasonable to combine the
21 references. To determine this, we must first construe the term "fragile digital
22 watermark." According to the Specification, digital watermarking is a form of
23 steganography, and encompasses techniques by which plural bits of digital data are
24 hidden in some other object without leaving human-apparent evidence of alteration

1 or data representation. Steganography is hiding a secret message within a larger
2 one in such a way that others can not discern the presence or contents of the hidden
3 message (FF 01, 02, 03). Thus, a digital watermark is digital data hidden from
4 human view. A fragile digital watermark is a digital watermark designed not to
5 fully withstand the scanning or printing operations associated with photocopying
6 or PC-based scanning and printing (FF 04).

7 We find that Leon explicitly refers to using watermarks (FF 06). This is not in
8 dispute. The Appellants argue that Leon's watermarks are not digital watermarks.
9 We find that Leon also explicitly describes that its postage labels include various
10 fields that may be encoded or signed with digital keys and that may have encoded
11 texts and micro printing (FF 06). These elements may be visible or invisible (FF
12 10 & 11), or otherwise hidden (FF 14). One of ordinary skill knew that fields
13 capable of encoding and digital signing were digital, and as such represented plural
14 digital bits. One of ordinary skill also knew that invisible fields were hidden from
15 human view. The Appellants argue that each of these techniques, including the use
16 of watermarks, were separate from each other. But we find that Leon explicitly
17 taught interchanging these techniques (FF 08). Thus, Leon at least suggested the
18 use of watermarks as bits of digital data hidden from human view, otherwise
19 known as digital watermarks.

20 We further find that one of ordinary skill, having found digital watermarks for
21 fraud detection to be suggested by Leon, would have been led to other references
22 describing the use of digital watermarks for fraud prevention, such as Bhaskaran
23 which described detecting tampering of a digital image so watermarked by
24 embedding a fragile watermark in a digital image. We find the Appellants'
25 arguments that Bhaskaran would be unnecessary because Leon already provided

1 fraud prevention techniques to be unpersuasive. One of ordinary skill knew that
2 fraud detection and prevention was a matter of probability, not certainty, and that
3 combining multiple techniques improved security by increasing the probability that
4 fraud would be detected.

5 We conclude that the Appellants have failed to meet their burden of showing
6 the Examiner erred.

Claims 2 and 15

8 Claims 2 and 15 further require that the watermark is formed with ink.

9 The Examiner found that Leon described using ink (Answer 5). The
10 Appellants contend that Leon does not describe forming a watermark with ink
11 (Appeal Br. 12: Claim 2). We find that Leon explicitly states that elements in the
12 indicia can be printed using various types of ink (FF 10). Leon also states that
13 watermarks are among the enumerated examples of indicia (FF 06). Thus, by
14 inference, Leon describes watermarks using ink.

Claims 3 and 16

16 Claims 3 and 16 further require that the watermark is formed by texturing of
17 the original envelope medium.

18 The Examiner found that Leon describes texturing with imprints in the ink
19 (Answer 5). The Appellants contend that Leon does not describe texturing (Appeal
20 Br. 13:Claim 3) and that Leon's imprints are exclusive from Leon's watermarks
21 (Reply Br. 6:Claim 3). Since the Appellants acknowledge the Examiner's finding
22 of imprints used by Leon, we take the Appellants' argument that Leon does not
23 describe texturing to mean that the word texture itself is not present. This is

simply not a dispositive argument, since art is available for what it describes explicitly and implicitly, not merely for the precise words employed. Although the elements must be arranged as required by the claim, this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990).

6 Again we find that Leon explicitly taught interchanging its techniques (FF 08).
7 Among these techniques were imprinting

8 *Claims 4, 7, 17, and 21*

9 Claims 4 and 17 further require a second digital watermark that withstands at
10 least certain photocopying operations.

11 The Examiner found that Yeung described robust watermarks that withstand
12 copying. The Examiner concluded that it would have been obvious to a person of
13 ordinary skill in the art to have applied Yeung's robust watermarks to Leon for the
14 purposes of robust watermarks taught by Yeung (Answer 5).

15 The Appellants contend that Yeung describes digital media and copying of
16 such digital media, contrasted with paper media and photocopying in claim 4.
17 They further argue that robust watermarks in the digital domain quickly become
18 fragile when subjected to conventional 300 dot per inch photocopying after having
19 been printed. They conclude that none of the references describe digital
20 watermarks that survive photocopying (Appeal Br. 13-14:Claim 4).

21 We disagree. Leon describes the use of digital watermarks in postal marks, as
22 we found *supra*. Bhaskaran describes reasons for using both copy resistant and
23 tamper resistant watermarks, *viz.* copy resistant watermarks provide authentication
24 and tamper resistant, i.e. robust, watermarks provide identification (FF 19 & 20).

1 Bhaskaran also describes printing the data embodying these watermarks (FF 22).
2 However, Bhaskaran does not use the word “robust” to describe such tamper
3 resistant watermarks. Yeung does describe such watermarks as robust (FF 24).
4 Thus, Bhaskaran and Yeung describe why one of ordinary skill would have some
5 of Leon’s watermarks be fragile and some robust. We find the Appellants’
6 argument that Yeung describes digital rather than paper media to be unpersuasive
7 because Bhaskaran describes printing out the digital contents including digital
8 watermarks (FF 21) and Yeung merely provides additional technical detail to
9 Bhaskaran.

10 We find the Appellants’ argument that robust watermarks may become fragile
11 when submitted to conventional 300 dot per inch photocopying to be unpersuasive
12 because claim 4 does not specify the photocopy parameters, and the Specification
13 allows that watermarks may use inks that are invisible to the human eye (FF 05),
14 which would require unconventional photocopy parameters to scan. We also find
15 that it was well within the skill of those in the art of digital image design to create
16 digital data whose printed image could purposefully withstand photocopying.
17 Since Bhaskaran and Yeung provide the reason to do so, the use of a robust digital
18 watermark by Leon by a person of ordinary skill was at least predictable.

19 The Appellants argued that claims 7 and 21 stand or fall with claims 4 and 14
20 (Appeal Br. 16:Claim 7) and therefore fall with those claims.

21 *Claims 5 and 18*

22 Claims 5 and 18 further require that the second digital watermark encodes data
23 useful for linking to an internet computer site.

1 The Examiner found that Yeung embeds GPS information that would be useful
2 for linking to an internet site with content indexed by GPS position (Answer 6).
3 The Appellants contend that this stretches the construction of claim 5 too far,
4 because the Specification describes a URL or a pointer to a URL (Appeal Br. 14-
5 16:Claim 5).

We disagree. The use of a URL is simply not found within claim 5. We do not import limitations from the Specification into the claims, *E-Pass*, 343 F.3d at 1369.

8 The Examiner is simply construing the claim with the breadth that the
9 Appellants used in drafting claim 5. Claim 5 merely requires utility in linking to a
10 web site. It does not narrow in any manner how such linking is performed or how
11 the utility is realized. Claim 5, above all else does not limit which web sites such
12 linkage may be to and whether the utility must be functional or perceptual. Thus,
13 the data may be nonfunctional descriptive material useful only to helping an
14 operator recall something about a site. In such a case, the actual data would not
15 distinguish the invention from the prior art in terms of patentability, *In re Ngai*,
16 367 F.3d at 1339.

17 However, the Examiner went further and found that Leon suggests providing
18 information that is functionally useful in linking to sites indexed by GPS
19 information. Again, this is simply a finding that is consistent with the breadth of
20 the scope of claim 5 as drafted.

Claims 6 and 19

22 Claims 6 and 19 further require that the second digital watermark encodes data
23 representing a device or user that produced the document.

1 The Examiner found that Yeung describes using digital watermarks to encode
2 the user identification (Answer 6). The Appellants contend that since Leon already
3 provided human readable information providing the claimed function, no
4 modification was warranted (Appeal Br. 16:Claim 6). While we agree that Leon
5 describes the claimed function (FF 09), Leon also explicitly taught interchanging
6 its techniques (FF 08). Thus, Leon at least suggested using its digital watermarks
7 to provide the claimed function as well.

Claims 9 and 13

9 Claims 9 and 13 further require the second digital watermark be printed on the
10 envelope by the same printing assembly used to print a franking mark.

11 The Examiner found that Leon described using the same printer (Answer 7).
12 The Appellants contend that Leon provides no such disclosure (Appeal Br.
13 17:Claim 9). We disagree. Leon describes printing all of the features with the
14 same printer (FF 07 & 17).

Claims 11 and 20

16 Claims 11 and 20 further require a second watermark on a side opposite a side
17 on which the first watermark is formed. The Examiner found that Leon described
18 printing on the opposite side (Answer 8). The Appellants contend that Leon
19 contains no such disclosure (Appeal Br. 18:Claim 11).

20 We disagree. Leon describes printing its indicia on labels (FF 07). These
21 labels contain various combinations of indicia including digital watermarks. It was
22 well known at the time of the invention to place duplicate labels at various places
23 on a package to ensure the delivery personnel did not overlook the label. Thus,
24 placing two such labels on opposite sides was a predictable placement. “The

1 combination of familiar elements according to known methods is likely to be
2 obvious when it does no more than yield predictable results.” *KSR*, 127 S. Ct. at
3 1739.

4 *Claims 8, 10, and 12*

5 Claims 8, 10, and 12 further require the second digital watermark be printed at
6 the same time as a franking mark and a digital watermark occupy a region that is
7 also occupied by a franking mark.

8 The Examiner found that Leon described printing at the same time and printing
9 in the same region (Answer 7). The Appellants contend that Leon contains no such
10 disclosure of printing at the same time (Appeal Br. 16-17:Claim 8) and that the
11 portion of Leon cited by the Examiner contains no such disclosure of region
12 occupation (Appeal Br. 17-18:Claim 10).

We disagree. First, these claims are directed to an envelope with franking and watermarks. Whether parts of the watermark and franking marks are imposed simultaneously does not alter the resultant structure and therefore cannot provide patentable significance. Leon describes printing all of the features with the same printer (FF 07 & 17), implying that all are printed at the same time. Leon also describes placing various identifiers anywhere on the postage label (FF 16) and that the invisible, i.e. hidden identifiers can be combined with conventional franking indicia (FF 17). Claim 10 also imposes no limitation on the size of the region nor does it require overlap. Thus, not only does Leon provide explicit examples of overlap or close proximity of hidden watermark type identifiers with franking marks, but claim 10 is sufficiently broad to encompass having the region

1 be the entire postal label, which would necessarily and inherently cause the
2 watermarks and franking marks to be in the same region.

3 The Appellants have not sustained their burden of showing that the Examiner
4 erred in rejecting claims 1-21 under 35 U.S.C. § 103(a) as unpatentable over Leon,
5 Bhaskaran, and Yeung.

CONCLUSIONS OF LAW

7 The Appellants have sustained their burden of showing that the Examiner erred
8 in rejecting claims 1-21 under 35 U.S.C. § 101 as directed to non-statutory subject
9 matter, but have not sustained their burden of showing that the Examiner erred in
10 rejecting claims 1-21 under 35 U.S.C. § 103(a) as unpatentable over the prior art.

11 On this record, the Appellants are not entitled to a patent containing claims
12 1-21.

DECISION

14 To summarize, our decision is as follows:

15 • The rejection of claims 1-21 under 35 U.S.C. § 101 as directed to non-
16 statutory subject matter is not sustained.

17 • The rejection of claims 1-21 under 35 U.S.C. § 103(a) as unpatentable over
18 Leon, Bhaskaran, and Yeung is sustained.

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1 No time period for taking any subsequent action in connection with this appeal
2 may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

3

AFFIRMED

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10 jlb

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12 Digimarc Corporation
13 9405 SW Gemini Drive
14 Beaverton, OR 97008

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